

What is claimed is:

1. A mobile network for communication between a plurality of terminals, comprising:

a first IP (Internet Protocol) node for generating, on receiving an IP packet meant for a mobile terminal usually connected to said first IP node, but handed over, an encapsulated IP packet for transferring said IP packet to a destination of said mobile terminal, and transferring said encapsulated IP packet to said destination via a path matching with a QoS (Quality of Service) class of said encapsulated IP packet; and

a second IP node for separating, when the mobile terminal is connected to said second IP node at the destination, said IP packet from said encapsulated IP packet received from said first IP node and sending said IP packet to said mobile terminal;

wherein the mobile terminal handed over reports the destination to said first IP node together with QoS information for setting the QoS class of the encapsulated IP packet.

2. The network as claimed in claim 1, wherein when a plurality of destinations of the IP packet exist, said first IP node generates the encapsulated IP packets corresponding in number to said plurality of destinations and sends said encapsulated IP packets to said plurality of destinations.

3. The network as claimed in claim 1, wherein said first IP node stores destination information and the QoS information in a form of a table.

4. The network as claimed in claim 3, wherein when a plurality of destinations of the IP packet exist, said first IP node generates the encapsulated IP packets corresponding in number to said plurality of destinations and sends said encapsulated IP packets to said plurality of destinations.

5. The network as claimed in claim 3, wherein said first IP node sets a preselected valid term on the destination information and the QoS information and updates said destination information and said QoS information when the mobile terminal is handed over and at preselected intervals.

6. The network as claimed in claim 5, wherein when a plurality of destinations of the IP packet exist, said first IP node generates the encapsulated IP packets corresponding in number to said plurality of destinations and sends said encapsulated IP packets to said plurality of destinations.

7. The network as claimed in claim 1, wherein the mobile terminal reports the destination and the QoS information to said first IP node by using a control packet for registration.

8. The network as claimed in claim 7, wherein when a plurality of destinations of the IP packet exist, said first IP node generates the encapsulated IP packets corresponding in number to said plurality of destinations and sends said encapsulated IP packets to said plurality of destinations.

9. In a mobile network for communication between a plurality of terminals, an IP node to which a first terminal is usually connected

generates, on receiving a first IP packet meant for said first terminal handed over, a second IP packet having an IP address of a destination of said first terminal substituted for an IP address of said first IP packet and sends said second IP packet to said destination via a path matching with a QoS class of said second IP packet, and

the first terminal reports the destination to at least one of said IP node and a second terminal sent the first IP packet together with QoS information for setting a QoS class of the second IP packet.

10. The network as claimed in claim 9, wherein when a plurality of destinations of the first IP packet exist, said IP node generates the second IP packets corresponding in number to said plurality of destinations and sends said second IP packets to said plurality of destinations.

11. The network as claimed in claim 9; wherein the first terminal reports the destination and the QoS information to said IP node and the second terminal by using a control packet for registration.

12. The network as claimed in claim 11, wherein when a plurality of destinations of the first IP packet exist, said IP node generates the second IP packet corresponding in number to said plurality of destinations and sends said second IP packets to said plurality of destinations.

13. The network as claimed in claim 9, wherein said IP node and the second terminal each store the destination information and

the QoS information in a form of a table.

14. The network as claimed in claim 13, wherein when a plurality of destinations of the first IP packet exist, said IP node generates the second IP packet corresponding in number to said plurality of destinations and sends said second IP packets to said plurality of destinations.

15. The network as claimed in claim 13, wherein said IP node and the second terminal each set a preselected valid term on the destination information and the QoS information and update said destination information and said QoS information when the first terminal is handed over and at preselected intervals.

16. The network as claimed in claim 15, wherein when a plurality of destinations of the first IP packet exist, said IP node generates the second IP packets corresponding in number to said plurality of destinations and sends said second IP packets to said plurality of destinations.

17. The network as claimed in claim 9, wherein on receiving the destination information and the QoS information from the first terminal, the second terminal generates the second IP packet and sends said second IP packet to said first terminal.

18. The network as claimed in claim 17, wherein when a plurality of paths exist, the second terminal copies the second IP packets by a number corresponding to a number of said plurality of paths and sends copied IP packets to the first terminal via said plurality of paths.

19. An IP packet transferring method for allowing a plurality of terminals to communicate with each other via a mobile network, said IP packet transferring method comprising the steps of:

causing a first IP node to which a mobile terminal is usually connected to generate, on receiving an IP packet meant for said mobile terminal handed over, an encapsulated IP packet for transferring said IP packet to a destination of said terminal;

causing the first IP node to transfer the encapsulated IP packet to the destination via a path matching with a QoS class of said encapsulated IP packet; and

causing a second IP node to which the mobile terminal is connected at the destination to separate the IP packet from the encapsulated IP packet received from the first IP node and sending said IP packet to said mobile terminal;

wherein the mobile terminal handed over reports the destination to the first IP node together with QoS information for setting the QoS class of the encapsulated IP packet.

20. The method as claimed in claim 19, wherein when a plurality of destinations of the IP packet exist, the first IP node generates the encapsulated IP packets corresponding in number to said plurality of destinations and sends said encapsulated IP packets to said plurality of destinations.

21. The method as claimed in claim 19, wherein the mobile terminal reports the destination and the QoS information to the first IP node by using a control packet for registration.

22. The method as claimed in claim 21, wherein when a plurality of destinations of the IP packets exist, the first IP node generates the encapsulated IP packets corresponding in number to said plurality of destinations and sends said encapsulated IP packets to said plurality of destinations.

23. The method as claimed in claim 19, wherein the first node stores destination information and the QoS information in a form of a table.

24. The method as claimed in claim 23, wherein when a plurality of destinations of the IP packet exist, said first IP node generates the encapsulated IP packets corresponding in number to said plurality of destinations and sends said encapsulated IP packets to said plurality of destinations.

25. The method as claimed in claim 23, wherein a preselected valid term is set on the destination information and the QoS information, and said destination information and said QoS information are updated when the mobile terminal is handed over and at preselected intervals.

26. The method as claimed in claim 25, wherein when a plurality of destinations of the IP packet exist, said first IP node generates the encapsulated IP packets corresponding in number to said plurality of destinations and sends said encapsulated IP packets to said plurality of destinations.

27. An IP packet transferring method for allowing a plurality of terminals to communicate with each other via a mobile network, said

IP packet transferring method comprising the steps of:

causing an IP node to which a first terminal is usually connected to generate, on receiving a first IP packet meant for said first terminal handed over, a second IP packet having an IP address of a destination of said first terminal substituted for an IP address of said first IP packet;

causing the IP node to send the second IP packet to the destination via a path matching with a QoS class of said second IP packet; and

causing the first terminal to report the destination to at least one of said IP node and a second terminal sent the first IP packet together with QoS information for setting a QoS class of the second IP packet.

28. The method as claimed in claim 27, wherein the first terminal reports the destination and the QoS information to the IP node and the second terminal by using a control packet for registration.

29. The method as claimed in claim 27, wherein the IP node and the second terminal each store destination information and the QoS information in a form of a table.

30. The method as claimed in claim 27, wherein a preselected valid term is set on the destination information and the QoS information, and said destination information and said QoS information are updated when the first terminal is handed over and at preselected intervals.

31. The method as claimed in claim 27, wherein when a plurality of destinations of the first IP packet exist, said IP node generates the second IP packets corresponding in number to said plurality of destinations and sends said second IP packets to said plurality of destinations.

32. The method as claimed in claim 27, wherein when the first terminal is handed over, the IP node generates the second IP packet having an IP address of the destination substituted for an IP address assigned to said first terminal and sends said second IP packet to said first terminal.

33. The method as claimed in claim 32, wherein when a plurality of paths exist, the second terminal copies the second IP packet by a number corresponding to a number of said plurality of paths and sends copied IP packets to the first terminal via said plurality of paths.

34. A location registration server connected to a mobile network for transferring IP packets to thereby allow a plurality of terminals, which include a mobile terminal usually connected to said location registration server, to communicate with each other, said location registration server comprising:

a processing device for encapsulating, on receiving an IP packet meant for the mobile terminal handed over, said IP packet to thereby produce an encapsulated IP packet and transferring said encapsulated IP packet to a destination of said mobile terminal via a path particular to a QoS class to which said encapsulated IP packet belongs; and



a storage for storing destination information and QoS information, which is used to set the QoS class of the encapsulated IP packet, received from the mobile terminal handed over.

35. The server as claimed in claim 34, wherein when a plurality of destinations to which the IP packet should be transferred exist, said processing device produces the encapsulated IP packets corresponding in number to said plurality of destinations and then sends said encapsulated IP packets.

36. The server as claimed in claim 34, wherein said storage stores the destination information and the QoS information in a form of a table.

37. The server as claimed in claim 36, wherein when a plurality of destinations to which the IP packet should be transferred exist, said processing device produces the encapsulated IP packets corresponding in number to said plurality of destinations and then sends said encapsulated IP packets.

38. The server as claimed in claim 36, wherein a preselected valid term is set on the destination information and the QoS information, and said destination information and said QoS information are updated when the mobile terminal is handed over and at preselected intervals.

39. The server as claimed in claim 38, wherein when a plurality of destinations to which the IP packet should be transferred exist, said processing device produces the encapsulated IP packets corresponding in number to said plurality of destinations and then

sends said encapsulated IP packets

40. A location registration server connected to a mobile network for transferring IP packets to thereby allow a plurality of terminals, which include a mobile terminal usually connected to said location registration server, to communicate with each other, said location registration server comprising:

a processing device for generating, on receiving a first IP packet meant for the mobile terminal handed over, a second IP packet having an IP address of a destination of said mobile terminal substituted for an IP address of said first IP packet and sending said second IP packet to said destination via a path particular to a QoS class of said second IP packet; and

a storage for storing destination information and QoS information, which is used to set a QoS class to which the second IP packet belongs, received from the mobile terminal.

41. The server as claimed in claim 40; wherein when a plurality of destinations to which the IP packet should be transferred exist, said processing device produces the encapsulated IP packets corresponding in number to said plurality of destinations and then sends said encapsulated IP packets.

42. The server as claimed in claim 40; wherein said storage stores the destination information and the QoS information in a form of a table.

43. The server as claimed in claim 42, wherein when a plurality of destinations to which the IP packet should be transferred exist,

said processing device produces the encapsulated IP packets corresponding in number to said plurality of destinations and then sends said encapsulated IP packets.

44. The server as claimed in claim 42, wherein a preselected valid term is set on the destination information and the QoS information, and said destination information and said QoS information are updated when the mobile terminal is handed over and at preselected intervals.

45. The server as claimed in claim 44, wherein when a plurality of destinations to which the IP packet should be transferred exist, said processing device produces the encapsulated IP packets corresponding in number to said plurality of destinations and then sends said encapsulated IP packets.

46. A fixed terminal connected to a mobile network for interchanging IP packets with a mobile terminal, said fixed terminal comprising:

a processing device for replacing, when the mobile terminal is handed over, an IP address assigned to a first IP packet sent to said mobile terminal with an IP address indicative of a destination of said mobile terminal, and sending said second IP packet to said destination via a path particular to a QoS class of said second IP packet; and

a storage for storing destination information and QoS information, which is used to set a QoS class to which the second IP packet belongs, received from the mobile terminal.

47. The terminal as claimed in claim 46, wherein when a plurality of paths exist, said processing device produces the encapsulated IP packets corresponding in number to said plurality of paths and then sends said encapsulated IP packets via said plurality of paths.

48. The terminal as claimed in claim 46, wherein said storage stores the destination information and the QoS information in a form of a table.

49. The terminal as claimed in claim 48, wherein when a plurality of paths exist, said processing device produces the encapsulated IP packets corresponding in number to said plurality of paths and then sends said encapsulated IP packets via said plurality of paths.

50. The terminal as claimed in claim 46, wherein a preselected valid term is set on the destination information and the QoS information, and said destination information and said QoS information are updated when the mobile terminal is handed over and at preselected intervals.

51. The terminal as claimed in claim 50, wherein when a plurality of paths exist, said processing device produces the encapsulated IP packets corresponding in number to said plurality of paths and then sends said encapsulated IP packets via said plurality of paths.